

Still Alive With Sir Clive!

# ZXir QLive Alive!

The Timex/Sinclair North American User Groups Newsletter

Volume 11 No. 2

Summer 2001

## MEMORY MAP

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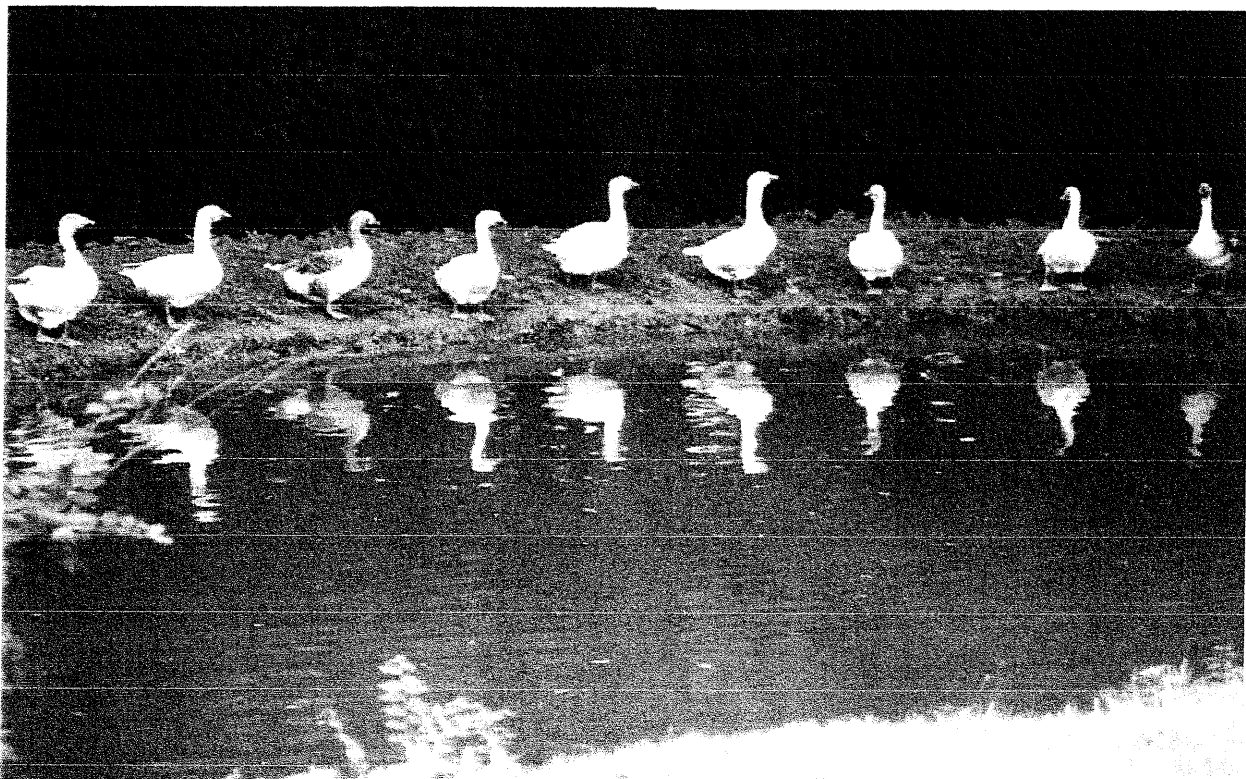
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Get your ducks<sub>(geese)</sub> in a row.

Not too late to mail-in your

## MEMBERSHIP

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Established 1991 The Timex/Sinclair North American User Groups Newsletter

# T/SNUG Information

We wish to support the following platforms: ZX-80/81, TS-1000, Spectrum, TS-2068, Z88 and QL. If you have any questions about any of these fine Sinclairs, contact the:

## **CHAIRMAN**

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Forsyth, IL 62535  
(217) 875-8043

## **VICE-CHAIRMEN**

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### **Z88** Library

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Mechanicsburg, PA 17055-9146  
717 732-4374

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swensontc@geocities.com

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604 583-2819

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Geneva, IL 60134-1631  
630 232-6147

### **AERCO & Z80 Emulator**

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Mt. Clemens, MI 48038

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Streamwood, IL 60107-1647  
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## *ZXir QLive Alive!*

Is the newsletter of T/SNUG, the Timex/Sinclair North American User Groups, providing news and software support to the T/S community in a **VOLUME** of four newsletters per year; beginning with the Spring (March) issue.

T/SNUG's main goal is to preserve and encourage the use of Sinclair computers by providing an open forum for the exchange of knowledge, building and maintaining of software libraries. Providing vendors, repair service and members with free ad space.

It is the user groups and individual subscribers, rather than the vendors, that provide the pecuniary support for this newsletter. Vendors and developers receive this newsletter free of charge, though contribution from vendors and user groups is gratefully accepted. Please support our vendors and service providers whenever possible.

If you have a problem or you have solved a problem, please share it with the rest of us. No problem will be considered unimportant.

## **Editor/Treasurer/Publisher**

You can keep T/SNUG alive by an annual contribution of \$12 for one VOLUME made payable to Abed Kahale.

Send check to:-

**ABED KAHALE**

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## **Article Contributions**

Send in your articles and inputs by disk, hardcopy mail, or e-mail to:—

**Abed Kahale**

E-mail: [AKahale@compuserve.com](mailto:AKahale@compuserve.com)

## **WEBPAGES**

<http://users.aol.com/clubbbs/tsnug/>  
<http://www.outlawnet.com/~jboatno4>  
<http://www.unixville.com/2068>  
[ql-users@nvg.ntnu.no](mailto:ql-users@nvg.ntnu.no)

## **Trea\$ury Note\$**

As of June 1, 2001, we have a balance of \$602

# Input/Output

by *Abed Kahale*

*My apologies for the poor print quality of the last Newsletter. The printer gave me a hard time while I was still unpacking but I wanted to mail it out on time.*

Hello....

This is a short note to let everyone know that I am still working on the manual for the earlier version of LarKen DOS for the Timex/Sinclair 2068 and the manual for LarKen DOS for the Timex/Sinclair 1000. The progress has been slow because these manuals contain a lot more information in diagrams and charts than the other manuals I have done thus far.

I am in need of two things to complete the manuals:

- 1) A diagram of the motherboard for the Shugart SA455 disk drive, and,
- 2) Some software for drawing circuit diagrams -- IBM, T/S 2068, ZX Spectrum whatever.

The diagrams in the manual are so crude or so degraded from being photocopied and re-photocopied that they are really no longer acceptable for the new versions of the manuals.

If anyone has any graphic files showing the various components and set-up of the LarKen system that can be used in these manuals, I would be thankful for any donations to the cause. Thank you all

**David Soley**

k\_david\_solly@hotmail.com

owner-2068@unixville.com

Reply-To: 2068@unixville.com

.....There is all kinds of new stuff for the Z88 (TCP/IP stack, can play Spectrum games, etc). You might find it interesting when you have the time.

I know that a number of the members are not online. I was kind of getting at starting a Forman for those members that are online. By asking questions to the mailing list they would get a faster answer than sending it to you, and then you sending it out.

BTW, the guy running the 2068 site at www.unixville.com lives in the Bay Area. I've invited him over to my place to see my QL and Q40 and to browse through all of the older mags I have (T/S User, Time Designs, Update, ZX Monthly, Sinc-Link, etc.).

**Tim Swenson**

swensont@sirclive.csd.sgi.com

Abed,

Thanks to Mr. Quintero the "warehouse" now has his stuff here. This includes 4 QL's 2 of which are without case. The 2 in their case are marked bad membranes. We also have a working QL monitor, with one for spare parts

on the way. As I recall Manuel, said this shipment is due to closet cleaning dictated by THE BOSS. <grin> so you can list it as his or as in the T/SNUG/RMG "warehouse". Besides the shipment to Bob Wilson, that's the extent of activity up to date.

**J. Shepard**

jshepard@wccta.net

From: Donald S. Lambert

To: Christian Molnar <cmolnar@stamps.com>

Sent: Friday, April 06, 2001 2:13 PM

Subject:

## TS-2068 Tape Loading

Hi Cmolnar,

William McBrine had a little notice in the newsletter ZXir QLive Alive! about some questions that you had about loading cassette tapes into a T/S computer. The information given there is sparse but the same information applies to almost all of the T/S computers, but not the Z88 or the QL. When I moved in July of 1999 I sent all of my T/S equipment to J. Boatwright for others to use. But I did keep copies of some of the material on the T/S computers. I have looked through some of those papers and found some materials on the LOADING of programs into a T/S computer. I can copy the material if you want it, if you will pay the postage and copy fees.

The TS-1000 and the ZX-81 is looking for a signal strength of about 2 volts to LOAD a program. Below a threshold voltage, and it varies from computer to computer it will not LOAD and not give an error message. If the voltage is too high it will not LOAD and will cease the search for a program and give an error message. If way too high (I don't how high that is) it will possibly zap the input of the LOAD circuitry and ruin the computer. The TS-2068 is looking for a signal of about 5 volts. And the above applies to the TS-2068 as it applies to the TS-1000 except that the load voltage is about 5 volts.

Both computers are looking for a high frequency signal so the tape recorder should be set for the high range. The program tapes, for one reason or another, are often just to low a volume even with volume control advanced to the high end. There are two ways to increase the signal strength to get a good

LOAD. Part of the trouble is that the average tape recorders do not record exactly on the same path down the tape. If one is off just a trifle then the signal strength is less. That is why a program recorded on one machine will LOAD from that machine and may not LOAD from another.

One way to increase the voltage of the signal from the tape recorder is to use an audio transformer to step it up. That has to be done very carefully to avoid blasting the computer input. The other way is to use the Radio Shack audio amplifier (277-1008 \$11.99) which uses a 9 volt battery. Both work, as I have used them.

Another thing is that if you have both the LOAD and the SAVE cables plugged into both the tape recorder and the computer there is feedback that prevents either from working. I got around that by making a caddy to hold both T/S 2020 tape recorders, one was used to SAVE only and the other to LOAD only. That way since the tape recorders were on separate power supplies there was no feedback problem.

I used what I called a load aid. It actually stole a tiny amount of the voltage but it reported exactly the voltage level that was being inputted to the computer and also it had a speaker on it to enable you to listen to the sound which gave you clues as to how the loading was going or if there was a drop out on the tape. That plugged into the line going to the LOAD of the computer (I labeled the computer input LOAD and the output SAVE to avoid confusion between EAR and MIKE). All of that is covered in the material I can copy.

Also, I did end up making program length cassettes so that if I LOADED my word processor I could, after LOADING, turn the tape over and it would be ready to LOAD the same program without waiting to get to the end or search a long tape for it.

All of my heavy work with cassettes was done prior to my acquiring a disk interface in 1989. But since some programs were only available on cassette, I kept all the cassette equipment till I left the T/S computers except for the Z88.

Timex Still Lives,

**Don**

dslambert@email.msn.com

Abed,

Thanks for a year of great Timex/Sinclair software & hardware. Also,

## **Do you know where I can get my hands on some ASTRONOMY software for either the TS-1000, 1500, ZX-81 or TS-2068 !!!!**

I've been looking for years! Of course I can always use the great programs for the PC, but theirs nothing like a Timex/Sinclair to do the work on. I work for NASA on the 1997 Mars Pathfinder mission.

I developed some of the software used for the mission. The first programming I did was on my TS-2068 !! What do you know, **Timex/Sinclair** went to **MARS** !! Hope you can help me on the Astronomy software !!

**Dean Mikolajczyk**

Deanm97493@aol.com

4714 ARBOR DRIVE # 207

ROLLING MEADOWS IL 60008

---

I learned about computing when my father bought me a TS-1000 while I was recuperating from a kidney transplant. So I had 3 months off to learn computing. .... I still work for NASA.

I have all Timex/Sinclair home computers except the QL. I just can not part with any of them. They all work great, and still use them. I have built 2 of them from ZEBRA Systems. ZX-81, What a **BLAST** to see your own working computer that you built ! Thanks again !!

**Dean**

---

Hi Bob & Abed,

My ISP (OutlawNet) is having legal trouble with their internet provider (a company in Colorado). It has affected everyone, and everything, on OutlawNet (we are longer getting our original service and it has even affected email, occasionally). They say that everything will be resolved on or about April 18th. Hang in there we'll be back,

**Jack Boatwright**

jboatno4@outlawnet.com

---

Hi Everyone,

Wanted to thank you for your patience in my latest April mishap. As you may or may not know, I run the list and the Timex/Sinclair2068 Website from a server in my home. I discovered that it'd been hacked, and had to reinstall everything from scratch. Fortunately, most of my data was not deleted, except for the configuration of the mail list. That's why the email list is still out of commission for a few more days (perhaps another week) as I reconfigure qmail/sendmail and whatever else is needed to support it.

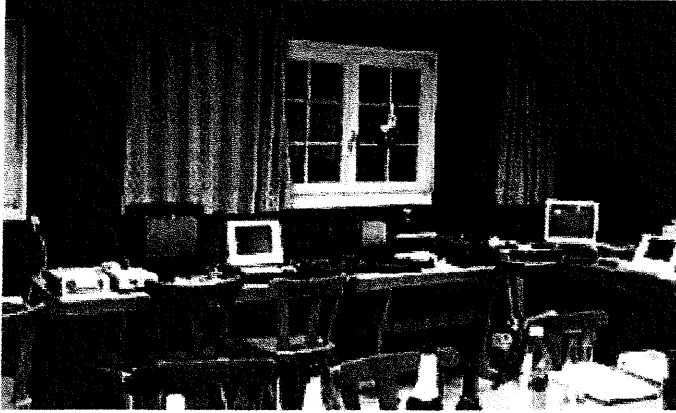
The WebServer is back, however. Nothing new and improved, yet. Luke Perry has promised me scans of some Sinclair rags, so when those get around to the server we'll definitely let everyone know. Thanks again,

**Louis Florit**

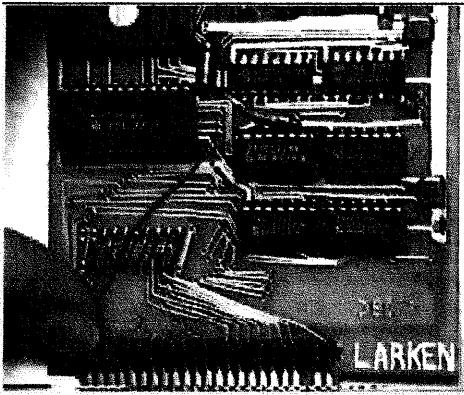
<http://www.unixville.com/2068>

# ZX-TEAM

## The 5<sup>th</sup> Annual Jubilee



A LarKen too



Hi Abed,

..... Unbelievable for me that nobody else wanted this nice machine (Z88). Yes, I will take it and pay for the postage of course. I do not have an Apple Mac, so it will give no sense to send these items. And please do not send the AC adapter, because here in Germany we have 230 Volts.

Please let me know, how much the postage will be. I will send the money in cash in a registered letter. Do you have the stuff, or do I have to write to someone else?

**By the way, I have just remembered that ZQA! had the 10th anniversary. My congratulations !!!!!!! Volume 1, Number 1 was from Spring 1991!!!!!! What about a party ;-))**

**Peter Liebert-Adelt**

[www.zx81.de](http://www.zx81.de)

Oh YES, please send them, I know at least two Z88 owners, who would be happy if I would lend them those books for a short while. Please send the notebooks too, I will look if they are usefull.

By the way, the Apple stuff, if it's for the connection with Z88, please send it, because I know a MAC user, perhaps I will make some experiments with him.

**Peter**

Dear Mr. Kahale,

I was interested to see your note on the QL-users' list. Is the "ZXir QLive Alive" generally available to users of the QL? If so, please may I be put on the circulation list? Yours faithfully,

**Paul L. Harris**

[plh@frsl5.f9.co.uk](mailto:plh@frsl5.f9.co.uk)

2 Tippett's Close

Enfield, Middlesex, U.K. EN2-0QR

Hello Abed,

It seems that **Gerton Lunter** is no longer taking orders for his Z80 ZX Spectrum emulator. All my attempts to contact him through the e-mail address proved were rejected and my letter was returned "addressee unknown".

You may want to remove his advertisement from ZQA! **Chezron Software**, however, has taken over distribution of the latest incarnation of Z80 which is version 4.0 for DOS and Windows. I am attaching a text file that gives all the details.

**David Solly**

[k\\_david\\_solly@hotmail.com](mailto:k_david_solly@hotmail.com)

How to register:

You can register either Z80 (the DOS program), or WinZ80, or both. Registration of Z80 or WinZ80 is £ 15 (BP 15); registration of both programs at once is £ 20. If you register just one program, please indicate clearly whether you want Z80 or WinZ80. If you specify neither, we will assume you want the DOS program.

For those who sent their registration fee after reading the information that comes with the now obsolete version 3.05, note that Z80 v4.00 emulates the DISCiPLE in all cases; if you sent the £ 20 fee you will receive both Z80 with DISCiPLE emulation and WinZ80.

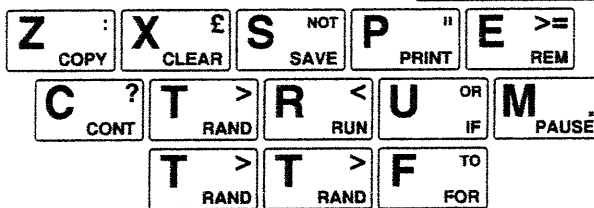
Please send the money in cash in British currency, or

as a check made payable to Chevron Software, to:  
 Chevron Software  
 34 Saltersgate Drive  
 Birstall  
 Leicester LE4 3FF England  
 Email: outletmag@yahoo.com  
<http://www.geocities.com/SiliconValley/Orchard/3420/>  
 Phone/Fax: 0116 220 9651  
 From abroad: +44 116 220 9651

If this is inconvenient, you can also send US\$ 20 /  
 US\$ 25, or DM 35 / DM 50 in cash. Please do NOT send  
 checks in currencies other than British Pounds.

David Solly  
 ac355@ncf.ca

SINCLIVE . bbf  
 ZX-81 . utf



Created by Darko Stanicic

This font is based on the Sinclair ZX Spectrum ROM character set and it's 8x8 grid. It is released as healthware, which means that if you use it, you will live through a happy and joyful life. No money, no postcards, no email, no fuss at all. Just use it for everything you want, sell it as your own work of art :) change it as you like, anything. But then again, if you ever print it in a magazine or do something useful with it, I'd love to see that... if it is no bother to you, send me a scan or just email to let me know - darone@sezampro.yu.

**The Story**

At first, I wanted to make only 110 original characters of the char set. Then I realized that I really **needed** our 10 national characters in it, and the rest was easy... ;)

**The Characters**

It supports several Unicode ranges (according to Microsoft Font Properties extension for Windows 95):

Basic Latin Latin-1 Supplement  
 Latin Extended-A Basic Greek Cyrillic

and more than a few Code Pages (also according to Font Properties extension):

1252 Latin 1 1250 Latin 2: East Europe 1251 Cyrillic  
 1253 Greek 1254 Turkish 1257 Windows Baltic

I'm not very experienced in foreign characters and there's a big possibility that I made some of the Chars ugly or mistaken, so if you notice something bad, some pixel missed or added or even a whole character wrong, please email me.

(I didn't even proof-test the font in the real world until now and I noticed that I don't like Zcaron - one of the 10 chars that made me do the whole job! So there's certainly gonna be another version, but not very soon - say, with 10 or 20 Chars to edit?)

There are 652 glyphs in it, even ff, fl, ffi and ffl ligatures - everything I found around, and it is nowhere near kern (big thanks to Emigre, for inspiring my life and sending me free posters). There are no italic or bold versions so far, but I am thinking of the bold version (ROR, OR A, if anyone remembers... there will be some really cool characters in it!).

Thanks

I'd like to thank Bojan Stojanovic for some essential info on how to set up Fontographer, and Dragan Petrovic for digging my Spectrum cassettes out of the dust. I'd also like to thank Sir Clive Sinclair for creating the best computer ever (at least in my heart). Long live Spectrum!

**Darone**

**T/SNUG JLO Public  
 Domain Software List:**

**Disk #6**

DFM ABC	Instant UDG
Multibase	Flowchart
Money Manager	Kingdom
M*5	Skyplot
Star Quiz	Day 91

**Disk #7**

Shooter	Paranoid
Graphic Show	Music Feast
Decision	Z-Row
Butterfly	Capitols
Morse Tutor	3D OXO

**Disk #8**

Telephone	Banner
Biograph	Tinyboard
Slots	Lotto
Morse	Breakout
Calendar	Conversion
Weather	Qbert
Buster	ReNUMBER
Golf	Ramdizk
Pro Tech	3 Axis

**Disk #9**

Musicola	Iching
Pairs	Parchisi
BlackJack	Cribbage
Battleship	New York
Magi!	Castle
Ztalker	Budget
Keyboard Tutor	

**Disk #10**

Circuit Board Scramble	Pro File
Robot	VuFile
Penetrator	Horace
Platoon	

**Luke Perry**

(Address on page 2)

Hi Abed...

I hope you will find these fonts interesting if not useful. Cheers,

# MSCRIPT *Command Summary*

David Solly

## Inserting:

Open Insert Block: <funct> - I  
Merge Text: <funct> - M  
Moving the cursor off the line merges leaving a space.

## Deleting:

Delete a Character: <funct> - D  
Delete a Word: <funct> - SW  
Hack to End of Line: <funct> - SH  
Remove Spaces to  
Next Character: <funct> - S space bar

## Block Commands:

Mark Block Begin/End: <funct> - B  
Copy Block to  
Cursor Position: <funct> - C  
Move Block to  
Cursor Position: <funct> - R  
Unmark All Blocks: <funct> - U  
<funct> - C and <funct> - R act on the first block only but <funct> - U unmarks all blocks simultaneously.

## Global Find and Change:

At Command Menu enter string to be found with F string.  
To find the next occurrence use <funct> - F  
To change every Find string use C string.

## Setting Tabs:

At Command Menu, Tx,x,x,x, sets Tab Stops.  
Pressing <funct> - □ at Text Entry/Edit moves the cursor to the next tab stop.

## Format Line Commands:

>JU = Y Justify On  
>JU = N Justify Off  
>CE = Y Center Text  
>CE = N End Centering  
>LM = xx Set Left Margin  
>LL = xx Set Line Length  
>LS = xx Set Line Spacing  
>FR = Y Flush Right  
>FR = N End Flush Right.  
>PN = xx Beginning Page Number.  
>HI = Y Start Hanging Indent.  
>HI = N Return to Normal Indent.  
>#n = x/x Define Print Code (n = 0-9).

## Headers:

>TT = /x/x/x/ Prints on All Pages.  
>OT = /x/x/x/ Prints on Odd Pages.  
>ET = /x/x/x/ Prints on Even Pages.

## Footers:

>BT = /x/x/x/ Prints on all Pages.  
>OB = /x/x/x/ Prints on Odd Pages.  
>EB = /x/x/x/ Prints on Even Pages.  
Position between slashes indicates flush left, center and flush right positions for Header and Footer Text. Use "3" for Page Number.

## Text Entry/Edit Commands:

<command> + □ : Moves to the Next Tab Stop.  
<command> + □ : Scrolls Cursor Up Video Screen.  
<command> + □ : Scrolls Cursor Down Video Screen.  
Bold Face Begin/End: <funct> - G and +  
Underline Begin/End: <funct> - G and -  
Embed Printer Codes: <funct> - G followed by number of code (0-9).  
Printer Codes <format> #n = xx, where n = 0-9.

Code	On	Off
Double width print	14	Released by line feed
Compressed print	15	18
Emphasized print	69	70
Double Strike	71	72
Italics print	27 + 52	27 + 53
Pica style	27 + 80	
Elite style	27 + 77	
Proportional	27 + 111	

## Key Combinations:

<funct> = Caps Shift + Break Key  
<command> = Symbol Shift + Break Key

~~~~~  
The command summary covers all versions of M-Script. The major changes were made in the way that M-Script saved and loaded files which is not covered in this summary. (Largely, I think, because M-Script was written for several PC platforms which all had their unique method for saving and loading files.) Jack Douhany, in his last revision of M-Script, added extended formatting commands which are covered in the documentation that came with that modification.

David Solly

k\_david\_solly@hotmail.com

# Maurice Gavin Presents

## THE RINGS OF SATURN

**T**hrough the telescope, Saturn is the beautiful ringed planet that never fails to impress – be it beginner or expert alike. This program does the next best thing and probably represents the most accurate computer simulation of Saturn ever attempted on a home micro. It is possibly superior to many mainframe efforts, with the known exception of NASA's Planetary Laboratories! [Editor: Remember, though, that this is in 1983!] David Solly.

**I**t features a full screen and solid image, with all hidden lines deleted and the globe and ring system drawn accurately to scale. The user may tilt the planet and ring system at any angle up to 90°. If 0 is input, the planet is drawn as viewed directly over its equator with the rings shown edge-on. If 90° is input, a polar view is presented with the ring system completely encircling the planet. You may select a northern or southern aspect for the tilt. An input of "s" will show the underside of the rings and the equator and visible pole correct for this aspect.

The Sequence of drawing the planet is as follows:

- 1) Check image size; rescale if tilt > 43
- 2) Draw globe correcting apparent oblateness for tilt
- 3) Draw equator correcting apparent oblateness for tilt
- 4) Draw semi-transparent ring system
- 5) "Trace" nearest edge of rings across globe according to N/S aspect
- 6) Draw Cassini Division through ring system: clock-wise for N aspect
- 7) Delete Cassini Division if "behind" planet
- 8) Plot visible pole position correcting apparent oblateness for tilt

**T**he program contains an option to copy the completed picture to the ZX printer to Save the image to tape with the Screen\$ command. The latter is simplicity itself – it is only necessary to press "p" (for picture) and start the recorder to save the picture you have created. The angle of tilt is automatically saved in the file name; e.g. "sat 23.4" Screen\$ and the Spectrum (or T/S 2068) will search and display the appropriate image from off of the tape.

**U**nlike some uninformed computer presentations of this planet, the globe is not circular (except for the polar view) and so the circle command cannot be used to draw the planet. This oval (or correctly termed oblate spheroid) shape is due to Saturn's rapid axial rotation in 10h 14m (Saturn's day), causing the equatorial "bulge" and polar "flattening". The Spectrum draws the globe and ring system via the plot command, using a rapid ellipse routine. In the case of the globe, the reduction in oblateness, as it is called, from 10 percent to zero (full circle) is applied progressively through the change of tilt from 0° to 90°. Similarly, the position of the equator and visible pole are correctly located according to the tilt of the

planet and the oblateness as presented.

**A**s seen from Earth, the appearance of the planet is limited to a maximum tilt of 26.73° (i.e. Saturn's axial tilt to the orbit about the Sun) in both north or south directions, plus or minus 0.49° depending on the relative position of Earth and Saturn in their orbits at the time. Thus, any tilt in excess of 28° will represent a viewpoint other than from Earth!

**T**he rem statements show the general structure of the program, in the case of drawing the globe and rings. It is only necessary to calculate the outline of one quadrant sequentially. Such a routine ensures the drawing is executed rapidly, with the minimum of calculation to slow the program down. In the case of the routine to draw the Cassini Division in the ring system, I have chosen to plot one complete ellipse and you will not how relatively slow, though satisfying, this proves to be.

**B**ecause the whole of the above program relies on the ability to draw ellipses rapidly, I have included as an addendum routine the short program called Solid Ellipse. It can easily be incorporated into your program if you wish draw these precise shapes. The variable y is used here to control both the vertical y co-ordinate plot position and the maximum radius of the ellipse (called the semi-major axis). The routine is short enough to "tinker with" and find out precisely how it works, perhaps with your own value in place of y in lines 110 and 120.

This article first appeared in:

Popular Computing Weekly, Greenwich, London, England. Sept. 22-28, 1983 by Maurice Gavin

```
10 REM The Rings of Saturn @
20 LET sc=1: BORDER 0: PAPER 0: INK
6: GO SUB 600
30 CLS : PRINT "Saturn @";
40 INPUT "Tilt (00 to 900)> ";z
50 IF z>43 THEN LET sc=.66
60 INPUT "N or S Tilt (n/s) > ";a$
70 LET ob=1.1*z/100
80 LET oe=.89+(.11*ob)
90 IF a$="s" THEN LET z=-z
100 PRINT TAB 20;"Tilt=";z;"O"
110 LET e=1/SIN ((.1+z)/180*PI)
115 LET p=COS ((.1+z)/180*PI): IF
a$="s" THEN LET p=-p
120 LET x=255/2: LET y=88
130 LET r=54*sc: LET h=126*sc
140 GO SUB 360
150 REM draw ring system
160 FOR f=0 TO 1.58 STEP .01
170 LET c=INT (SIN f*h)
180 LET d=INT (COS f*h/e)
190 PLOT x+c,y+d
200 DRAW -c/3,-d/3
210 PLOT x-c,y+d
```



```

220 DRAW c/3,-d/3
230 PLOT OVER 1;x-c,y-d
240 DRAW c/3,d/3
250 DRAW OVER 1;0,1
260 PLOT OVER 1;x+c,y-d
270 DRAW -c/3,d/3
280 DRAW OVER 1;0,1
290 NEXT f: GO SUB 460
300 REM menu/COPY/CONT/SCREEN$
310 PRINT #0;"Press x to COPY, c to
CONTinue"
320 PRINT #1;TAB 6;"s to SAVE ""sat
";STR$ z;""": PAUSE 0
330 IF INKEY$="x" THEN COPY : INPUT
"": GO TO 310
340 IF INKEY$="s" THEN INPUT "": SAVE
"sat "+STR$ z SCREEN$ : INPUT "": GO TO
310
350 RUN
360 REM draw oblate globe
370 FOR f=0 TO 1.42 STEP .019
380 LET a=INT (SIN f*r)
390 LET b=INT (COS f*r*oe)
400 PLOT x+a,y+b: DRAW 0,-b*2
410 PLOT x-a,y+b: DRAW 0,-b*2
420 NEXT f
430 REM draw equator
440 FOR f=PI*.5 TO PI*1.5 STEP .1:
PLOT OVER 1;x+SIN f*r,y+COS f*r/e: NEXT
f: RETURN
450 REM draw Cassini Division
460 LET cd=2.1
470 FOR f=0 TO PI*2 STEP .03: PLOT
OVER 1;x+SIN f*r*cd,y+COS f*r*cd/e:
DRAW OVER 1;2,0: NEXT f
480 REM delete CD behind globe
485 IF ABS z>26 THEN GO TO 570
490 FOR f=0 TO 1.42 STEP .01
500 LET a=INT (SIN f*r)
510 LET b=INT (COS f*r*oe)
520 IF a$="s" THEN LET b=-b
530 PLOT x+a,y: DRAW 0,b
540 PLOT x-a,y: DRAW 0,b
550 NEXT f
560 REM plot visible pole
570 PLOT OVER 1;x,y+r*p*oe
580 RETURN
600 REM create degree sign
601 POKE USR "o", BIN 00111000
602 POKE USR "o"+1,BIN 01101100
603 POKE USR "o"+2,BIN 01101100
604 POKE USR "o"+3,BIN 00111000
605 POKE USR "o"+4,0
606 POKE USR "o"+5,0
607 POKE USR "o"+6,0
608 POKE USR "o"+7,0
609 RETURN
9000 REM save routine
9010 SAVE "Saturn" LINE 1

5 PRINT "solid ellipse @"
10 REM by Maurice Gavin
20 INPUT "Tilt ";z: PRINT

```

```

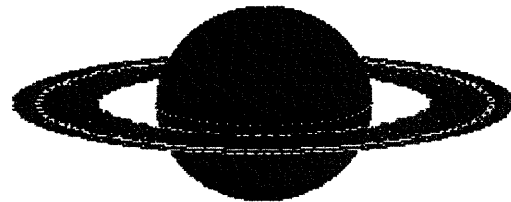
"Tilt=";z;CHR$ 130
30 LET e=SIN ((.1+z)/180*PI)
40 LET x=255/2: LET y=175/2
100 FOR f=0 TO PI/2 STEP .012
110 LET a=INT (SIN f*y)
120 LET b=INT (COS f*y*e)
130 PLOT x-a,y+b: DRAW 0,-b*2
140 PLOT x+a,y+b: DRAW 0,-b*2
150 NEXT f
200 OVER 1: PLOT 0,y: DRAW 255,0: PLOT
x,0: DRAW 0,175: OVER 0

```

*Color reversed for clarity*

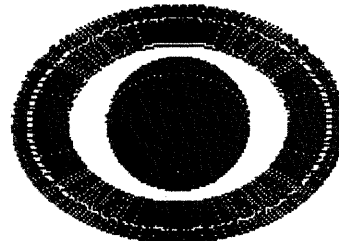
Saturn @

Tilt=11.5°



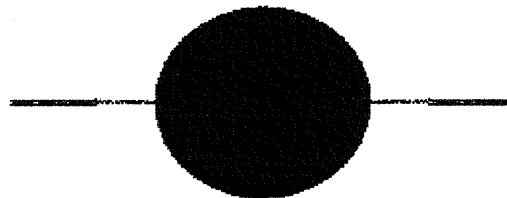
Saturn @

Tilt=-45°



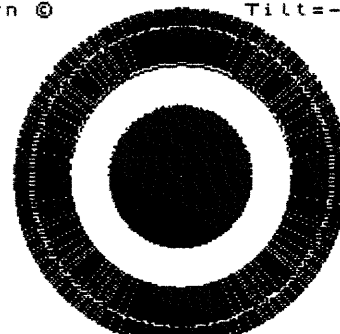
Saturn @

Tilt=0°



Saturn @

Tilt=-90°



# A FOUR-PART RESCUE OPERATION

An article by Eldad Patreanu <patrel@cs.openu.ac.il> originally posted to comp.sys.sinclair on May 18, 1995. Reformatted and edited by David Solly for ZXir QLive Alive! on March 31, 2001.

The rapid progress of mankind and its domination for the planet are the result of our ability to share information. No wonder, then, that the thought of lost information fills us with horror. Consider burning books – a powerful symbol of loss and destruction. With information lost... so is our own past.

With the rapid progress of storage media, come two new ways for information loss. The first is unreliable storage. Old faxes slowly fade into whiteness, magnetic tapes demagnetize and tear. The second is outdated or exotic storage. How many of us can play music on reels, access an 8-inch floppy, or even view a movie recorded on beta cassette?

It is clear, then, that information must be salvaged and stored on new media. Some information, namely that which has immediate financial value, will make the transition with ease. Other information, which has no home or ownership, must depend upon us, those who care for it, to save it and our past from oblivion.

There are four stages to informational salvation:

- **Gathering:** Collecting all the relevant information.
- **Processing:** Sorting, converting and other processing to make information accessible and usable.
- **Distributing:** Making the information available and its existence known.
- **Protecting:** Stopping or converting to our cause forces which, although they may have legal claim to some of the information, would only bring about its destruction through their blindness and inaction.

Time is our enemy. Each passing second endangers our old information, and thus, our connection to our past. We must act **now**.

How does this apply to us, the comp.sys.sinclair [and also the 2068.unixvill.com] community?

Obviously, [ZX] Spectrum and [Timex/Sinclair] software is in danger. And what we must do about it is probably along these lines...

- **Gathering:** Mostly Spectrum [and Timex/Sinclair] software in a format as close to the original as possible (for programs, a format describing the tape contents). Other material (ads, instructions, articles) is also needed.

- **Processing:** Deciding on the contents and structure of the ultimate Sinclair archive. Here is a (very rough) first draft.
- **News:** News about Sinclair Research and products. Spectrum/emulator Emulators for different machines. Hardware diagrams and descriptions.
- Games:** software/game
- Games demos** (first stages, etc. Demo Graphics and sound shows.

**Graphic packages / utilities**

**Programming:** assemblers, languages, enhancers.

**Utilities** "System" utilities.

**Business:** Word processing,

financial, databases, telecommunications.

**Hardware** Software designed for specific hardware.

**Docs:** Instructions.

**Cheats:** Game pokes, cheats, strategies, solutions,

- ❖ **ZX-80**
- ❖ **ZX-81**
- ❖ **TS-1000**
- ❖ **TS-2068** Like the Spectrum
- ❖ **QL**
- ❖ **Z88** Like the Spectrum but with most directories empty.

Programs will be archived in English where available and in the original language if it is not English. All versions (48K, 128K, graphic, more text) of programs will be archived.

This is just a rough draft, some things must be missing, others not organized very well, but...

- **Distribution:** The easy one. Probably one CD-ROM is enough for everything and a net site for on-line accessing.
- **Protecting:** Explaining the situation of software companies / programmers, checking laws in different countries... isn't it strange that the Speccy sensation CD-ROM was recalled because of the PC-Format version of Z80 [i.e. Gerton Lunter's ZX Spectrum emulator] but not one software company had anything against it?

**WELL, WHAT D'YA THINK?**

# LARKEN DISKETTE

Program by George Chambers Article by David Solly

The following ZX Spectrum mode program allows a backup to be made of a LarKen diskette onto tape and the reconstruction of a diskette from a tape backup.

The program may be used to archive valuable diskettes, to store information from a diskette when diskette space is at a premium, to transfer diskette information onto a medium more capable of withstanding the hazards of the postal system, and/or to solve certain drive related problems.

## Tape Backup System

### Notes:

1. The rate of transfer from diskette to tape is approximately 45 seconds per track.
2. The program backs up all tracks containing information including all "free" tracks which contain data from erased programs.
3. The diskette backup system will not backup an NMI "Autostart" program. To preserve such a program save a duplicate to the diskette using the normal save routine. All other types of NMI saves are supported.
4. The target diskette used for the reconstruction must be formatted in the same manner as the original diskette. The program will signal the proper configuration if a mismatch is detected.
5. Use good quality tape for recording backups. Avoid using cassettes longer than a C-90 if and when possible.

```
100 REM Tape Back-up utility
110 REM By G. Chambers 14 Richome
Court Scarborough, Ont. CANADA M1K 2Y1
120 REM For use with the LKDOS
system of 5120 bytes/track.
130 REM Use in Spectrum mode
140 BORDER 1: PAPER 1: CLS
150 PRINT AT 2,4; INK 2; PAPER
6;"LARKEN DISK UTILITY v1.1"; PAPER
1;,,TAB 5; PAPER 6;" Disk to Tape
Back-up "; PAPER 1,,TAB 7; PAPER 6;"By
George Chambers"
160 INK 3: PLOT 8,108: DRAW 0,62: DRAW
239,0: DRAW 0,-62: DRAW -239,0
170 INK 6: PLOT 16,114: DRAW 0,50:
DRAW 222,0: DRAW 0,-50: DRAW -222,0:
INK 7
180 RANDOMIZE USR 100: OPEN #4,"dd"
190 PRINT AT 12,3;"Wait...loading
code"
200 PRINT #4: GO TO 0: LET dr=0
210 REM MINIDOS Control Code
220 RESTORE 240
230 FOR n=44000 TO 44119: READ a: POKE
n,a: NEXT n
240 DATA
195,249,171,195,7,172,195,27,172,195
250 DATA
```

```
56,172,195,75,172,243,205,98,0,201
260 DATA
58,100,0,251,201,205,239,171,58,124
270 DATA
171,50,29,32,205,126,0,24,237,205
280 DATA
239,171,58,124,171,50,29,32,205,129
290 DATA
0,58,29,32,50,124,171,24,217,205
```

```
300 DATA
239,171,175,50,32,32,205,123,0,58
310 DATA 32,32,79,6,0,33,112,32,17,80
320 DATA
195,1,0,20,237,176,24,188,205,239
330 DATA
171,33,80,195,17,112,32,1,0,20
340 DATA
237,176,205,120,0,24,169,205,239,171
350 DATA
42,144,171,78,35,70,24,158,0,0
360 LET oo=0: LET oa=1: LET ob=2: LET
oc=3
400 LET settrack=44000: LET
nexttrack=44003
410 LET load=44006: LET save=44009:
LET track=43900
430 LET buffer=50000: LET
bufflenth=5120
440 DIM d$(320): DIM g$(9)
470 PRINT AT 10,3;"1. Save Disk to
Tape";AT 12,3;"2. Load from Tape to
Disk";AT 14,3;"3. Change Drive # - Now
"; FLASH 1;dr; FLASH 0;AT 16,3;"4.
Instructions";
AT 18,3;"5. Return to RAMdisk menu";AT
20,9;"Press a key"
480 IF INKEY$="1" THEN PAUSE 30: GO
TO 1000
490 IF INKEY$="3" THEN GO SUB 8010
500 IF INKEY$="2" THEN GO TO 2000
510 IF INKEY$="4" THEN GO SUB 3000:
RUN
520 IF INKEY$="5" THEN PRINT #4: GO
TO 4: PRINT #4: NEW
550 GO TO 470
790 PRINT #4: GO TO 4: PRINT #4: NEW
1000 REM Saving Disk to Tape
1010 IF INKEY$<>"" THEN GO TO 1010
1020 IF PEEK 23736<>168 THEN PRINT AT
12,0;d$: LET a=4: LET b=1: FOR i=10 TO
15: PRINT AT i,1; INK a; PAPER b; FLASH
1;" YOU MUST USE SPECTRUM MODE ": LET
```

```

c=a: LET a=b: LET b=c: NEXT i
1030 IF PEEK 23736<>168 THEN PRINT
''TAB 4;"Press any Key for menu": PAUSE
0: PRINT #4: GO TO 4: PRINT #4: NEW
1040 PAUSE 20: LET number=0
1050 PRINT AT 10,0;d$;AT 12,0;"Install
disk in drive ";dr'"Place fresh tape
in recorder'"Start recorder...and
press a key": PAUSE 0
1060 BEEP .5,20: PAUSE 30: POKE
23736,181: GO SUB 7500
1070 IF number=0 THEN LET side=PEEK
50020: LET tracks=PEEK 50021: LET
onside=ABS (side-3): LET tpd=PEEK
tracks*side
1080 PRINT AT 10,0;d$
1090 LET g=1: FOR n=buffer+2 TO
buffer+10: LET g$(g)=CHR$ PEEK n: LET
g=g+1: NEXT n
1100 IF number=0 THEN LET
g$="Directory"
1110 IF CODE g$=0 OR number>=tpd THEN
GO TO 4000
1120 PRINT AT 18,1;d$( TO 96);AT
18,1;"Saving ";g$;" @ track# ";number
1130 SAVE g$CODE buffer,bufflenth
1140 LET number=number+onside
1150 PAUSE 200: GO TO 1060
2000 REM Loading tape to Disk
2010 PRINT AT 19,0: LET number=0: GO
SUB 7500: LET side=PEEK 50020: LET
tracks=PEEK 50021: IF tracks=0 THEN
PRINT "Wrong format, check disk, and
Press any key to re-start": PAUSE 0:
RUN
2020 PRINT AT 10,0;d$: PRINT AT
10,1;"Start tape & leave running..."
2030 PRINT AT 11,12;"Saving to Drive#
";dr
2040 PRINT '' On this disk...Sides
";side'' Tracks per
side";tracks
2050 PAUSE 80
2060 LET number=0
2070 PRINT AT 19,0;d$( TO 64);AT
19,1;"Loading next track:";
2080 LOAD ""CODE 50000
2090 IF number=0 THEN GO SUB 3120
2100 IF number=0 THEN LET side=PEEK
50020: LET onside=ABS (side-3): LET
tracks=PEEK 50021: LET tpd=PEEK
tracks*side
2110 IF PEEK 50000=200 THEN PRINT AT
18,0;d$( TO 96);AT 18,3: FLASH
1;"Loading to disk Completed"; FLASH
0''TAB 9;"Press a key": FOR n=1 TO 5:
BEEP .5,10: BEEP .5,20: NEXT n: PAUSE
0: GO TO 6000
2120 LET g=1: FOR n=buffer+2 TO
buffer+10: LET g$(g)=CHR$ PEEK n: LET
g=g+1: NEXT n
2130 IF number=0 THEN LET
g$="Directory"

```

```

2140 GO SUB 7600
2145 IF number=0 THEN GO SUB 3120
2150 PRINT AT 16,0;d$( TO 160);AT
16,1;"Saved ...";g$;" on track ";number
2160 LET number=number+onside
2170 GO TO 2070
3000 INK 0: PAPER 7: BORDER 7: CLS
3010 PRINT TAB 9;"Instructions"
3020 PRINT '' This program has been
designed to copy a complete disk to
tape, and then to load the tape back
onto another disk."
3030 PRINT '' It works in the Spectrum
mode. This is because the LOAD/SAVE
routines are more accessible in the
Spectrum ROM."
3040 PRINT '' The program saves to
tape on a track by track basis."
3050 PRINT '' The program contains a
block of code (data statements). This
is a mini DOS used to control the
disk system."
3060 PRINT '' Press a key to
continue": PAUSE 0
3070 CLS : PRINT '' Although the
program is trans-parent as to the type
of drive that is used, care must be
taken to ensure that the same drive
type is used for the subsequent load as
was used for the initialsave."
3080 PRINT '' This is because the
directory which defines drive type has
not been modified to reflect a
different drive type."
3090 PRINT '' Therefore, although the
disk format is for the one drive
type the system interface, in lookingat
the directory, sees it as another
type. CRC errors will result."
3100 PRINT '' Press a key to return to
menu"
3110 PAUSE 0: CLS : RETURN
3120 IF PEEK 50020<>side OR PEEK
50021<>tracks THEN PRINT AT 10,0;d$;AT
10,2: FLASH 1;"Disk format not
compatible"; FLASH 0''Tape save is:"
";PEEK 50021; "tracks per side on
";PEEK 50020;" Side";("s" AND PEEK
50020=2)''Disk formatted to:"
";tracks;" tracks per side on
";side;"Side";("s" AND side=2)''
Press any key for re-start": PAUSE 0:
GO TO 3122
3121 RETURN
3122 IF INKEY$="y" OR INKEY$="Y" THEN
POKE 50020,side: POKE 50021,tracks:
RETURN
3130 RUN
4000 LET x=1: LET g$="NoMore": FOR
n=buffer+2 TO buffer+7: POKE n,CODE
g$(x): LET x=x+1: NEXT n
4040 POKE 50000,200: SAVE "NoMore"CODE
buffer,10: PRINT AT 12,0;d$;AT 15,5;

```

```

FLASH 1;"Disk saved to tape" FLASH
0;'TAB 9;"Press a key": FOR n=1 TO 5:
BEEP .5,10: BEEP .5,20:: NEXT n: PAUSE
0: GO TO 6000
6000 PRINT #4: GO TO 0
6010 FOR n=VAL "10" TO VAL "21": PRINT
AT n,NOT PI;c$: NEXT n
6020 PRINT AT VAL "15",VAL "6";"Disk
copy completed""Press P key for
RAMdisk menu, or another key to copy
next disk"
6030 PAUSE NOT PI
6040 IF INKEY$<>"P" AND INKEY$<>"p"
THEN RUN
6050 PRINT #4: GO TO 4: PRINT #4: NEW
7500 REM Load a Track
7510 POKE track,number: RANDOMIZE USR
settrack: RANDOMIZE USR load
7520 RETURN

```

```

7600 REM Save a Track
7610 POKE track,number: RANDOMIZE USR
settrack: RANDOMIZE USR save
7620 RETURN
7630 STOP
8000 INK 0: PAPER 7: BORDER 7: CLS :
STOP
8010 INPUT "Drive 0 to 3 ? ";dr
8020 PRINT #4: GO TO dr
8050 RETURN
8999 STOP
9000 CLEAR : LET od=4: PRINT AT
15,9;"SAVE ROUTINE"" Press ""D"" key
to save to disk,""" or ""T"" key to
save to tape": PAUSE 0
9010 IF INKEY$="t" OR INKEY$="T" THEN
LET od=3
9020 PRINT #od: SAVE "tapsav.BS" LINE
100: RUN

```

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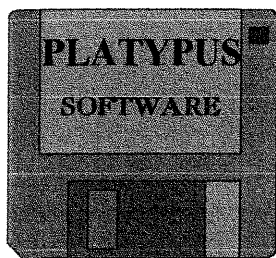
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